IN THE CLAIMS:

Please amend Claims 15-17, 19-21, and 45-50, as indicated below. The following is a complete listing of claims and replaces all prior versions and listings of claims in the present application:

Claims 1-14 (canceled).

Claim 15 (currently amended): A method of estimating an orientation angle of a local structure of a portion of an image, the portion of the image representing a region of the image having a substantially linear structure, said method comprising the steps of:

applying determining, using a complex energy operator, to the portion of the image to provide an energy encoded image portion representation of the portion of the image;

determining a phase component of the energy encoded image portion representation; and

determining an estimation of the orientation angle of the local structure of the portion of the image from the phase component of the energy encoded image portion representation.

Claim 16 (currently amended): A method according to claim 15, wherein the complex energy operator is defined as

$$\psi_r\{f\} = (D\{f\})^2 - fD^2\{f\},$$

and the phase component of the energy encoded [[image]] <u>representation</u> is defined as

$$2\beta_n = \arg(\psi_r\{f\}).$$

Claim 17 (currently amended): A method according to claim 15, wherein the complex energy operator is a modified complex energy operator defined as

$$\psi_M\{f\} = \left(D_M\{f\}\right)^2 - fD_M^2\{f\},$$

and the phase component of the energy encoded [[image]] <u>representation</u> is defined as

$$2\beta_n = \arg(\psi_M\{f\}).$$

Claim 18 (previously presented): A method according to claim 15, wherein the portion of the image is pre-processed to remove background offsets.

Claim 19 (currently amended): An apparatus for estimating an orientation angle of a local structure of a portion of an image, said apparatus comprising:

means for ~~applying~~ <u>determining, using</u> a complex energy operator<u>,</u> ~~to the portion of the image to provide~~ an energy encoded ~~image portion~~ <u>representation of the portion of the image</u>;

means for determining a phase component of the energy encoded ~~image portion~~ <u>representation</u>; and

means for determining an estimation of the orientation angle from the phase component of the energy encoded ~~image portion~~ <u>representation</u>.

Claim 20 (currently amended): An apparatus according to claim 19, wherein the complex energy operator is defined as

$$\psi_r\{f\} = (D\{f\})^2 - fD^2\{f\},$$

and the phase component of the energy encoded [[image]] representation is defined as

$$2\beta_n = \arg(\psi_r\{f\}).$$

Claim 21 (currently amended): An apparatus according to claim 19, wherein the complex energy operator is a modified complex energy operator defined as

$$\psi_r\{f\} = (D_M\{f\})^2 - fD_M{}^2\{f\},$$

and the phase component of the energy encoded [[image]] representation is defined as

$$2\beta_n = \arg(\psi_M\{f\}).$$

Claim 22 (previously presented): An apparatus according to claim 19, further comprising a means for pre-processing the portion of the image to remove background offsets.

Claims 23-44 (canceled).

Claim 45 (currently amended): A method of determining an orientation map representing estimates of orientation angles of an image at each of a plurality of points of the image, said method comprising the steps of:

applying determining, using a complex energy operator, to portions of the

image, that correspond to the plurality of points of the image to provide energy encoded image values value at each of the plurality of points of the image;

determining a phase component for each of the energy encoded image values; and

determining the orientation map from the phase components.

Claim 46 (currently amended): A method according to claim 45, wherein the complex energy operator is defined as

$$\psi_r\{f\} = (D\{f\})^2 - jD^2\{f\},$$

and the phase component of the energy encoded image value is defined as

$$2\beta_u = \arg(\psi_r\{f\}).$$

Claim 47 (currently amended): A method according to claim 45, wherein the complex energy operator is a modified complex energy operator defined as

$$\psi_r\{f\} = (D\{f\})^2 - jD_M^{\ 2}\{f\},$$

and the phase component of the energy encoded image value is defined as

$$2\beta_n = \arg(\psi_M\{f\}).$$

Claim 48 (currently amended): An apparatus for determining an orientation map representing estimates of orientation angles of an image at each of a plurality of points of the image, said apparatus comprising:

means for ~~applying~~ <ins>determining, using a</ins> complex energy operator<ins>,</ins> ~~to portions of the image that correspond to the plurality of points of the image to provide~~ energy encoded image values at each of the plurality of points <ins>of the image</ins>;

means for determining a phase component for each of the energy encoded image values; and

means for determining the orientation map from the phase components.

Claim 49 (currently amended): An apparatus according to claim 48, wherein the complex energy operator is defined as

$$\psi_r\{f\} = (D\{f\})^2 - fD^2\{f\},$$

and the phase component of the energy encoded image <ins>value</ins> is defined as

$$2\beta_n = \arg(\psi_r\{f\}).$$

Claim 50 (currently amended): An apparatus according to claim 48, wherein the complex energy operator is a modified complex energy operator defined as

$$\psi_r\{f\} = (D_M\{f\})^2 - fD_M{}^2\{f\},$$

and the phase component of the energy encoded image <ins>value</ins> is defined as

$$2\beta_n = \arg(\psi_M\{f\}).$$